



The Power of Digital Twins

Delivering real-time risk insight

2021

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Introduction

The commercial property insurance market of 2021 is ripe for modernisation.

Insurers and brokers lack comprehensive real-time risk data to help them monitor, detect and mitigate commercial property risks.

Fewer than 5% of commercial property locations are physically surveyed for risk and, of those which are, only 1 in 7 risk recommendations are actioned. This leaves the customer and insurer exposed financially if disaster strikes.

With mounting losses, insurers are forced to increase prices and restrict coverage and customers end up paying more.

Commercial property insurance is currently loss-making. The status quo is not working. There is an urgent need for rapid transformation to real-time intelligent insight. Digital Twins of risk can provide a 360° view of risk across 100% of your commercial property portfolio.

This report explains how Digital Twins of risk can be used to drive a smarter underwriting and risk management approach.

Change is happening fast.

Insurers have an opportunity to build competitive advantage by translating the mass of available data into actionable insights, leading to better decision making.

Anthony Peake

Highly experienced, results-focused CEO of Intelligent AI. Anthony has over 30 years' proven success in building companies, products and innovation strategies at major blue-chip corporations and start-ups including Oracle Corporation, British Telecom, General Electric and Apple. He has previously delivered leading risk management systems for 6 of the top 10 UK insurers.

Anthony has led the transformation of many industries including telecoms, local government and retail, and is passionate about transforming the insurance industry to the benefit of insurers and customers.



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“ It is important that the insurance industry embraces the opportunity of Digital Twins to shift from reactive to preventative. New business models and new behaviours around the profiling, management and pricing of risk will be unlocked with Digital Twins. ”

Hélène Stanway,
Market Engagement & Adoption Lead,
Lloyd's of London and SENSE

Produced in partnership with SENSE Consortium, the UK thought-leadership group of Insurers, brokers, corporate customers and InsurTech solution providers, including Lloyd's of London, Zurich Insurance and EY. Part of the Camelot Network, its goal is to revolutionise the commercial property insurance sector and reduce cost of risk through better use of data and cutting-edge risk management technology.

Improving the business model

Cloud computing, faster data processing and advances in artificial intelligence for data extraction and image analysis mean it is now possible to accurately develop digital models of risk at commercial properties without having to visit them.

Digital Twins create near real-time models to give a far more accurate 360° view of risk across 100% of commercial properties at a fraction of the current cost.

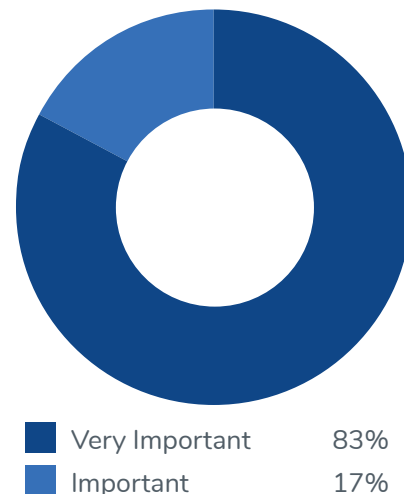
Digital Twins are made of up to 300 data sets, including

-  Open data (e.g. crime, fire, rateable value, financial data etc.)
-  Satellite spectral analysis data
-  IoT (Internet of Things) sensor data
-  Real-time natural catastrophe data (e.g. river flow and flood data, temperature and weather data, rainfall, landslip and seismic data)
-  AI generated data and AI extracted risk report data

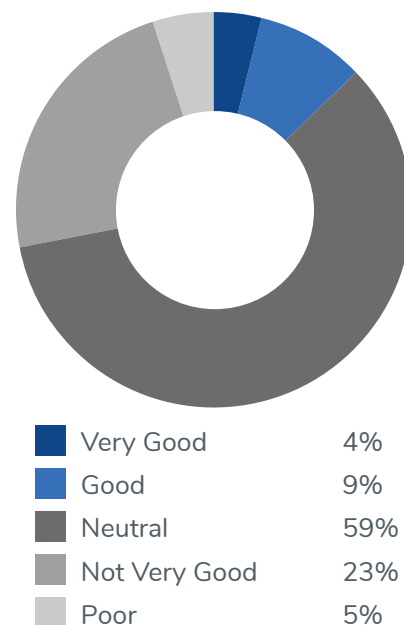
According to a 2021 survey by Intelligent AI, based on feedback from 43 insurers and brokers, 100% of insurers and brokers believe that having accurate and detailed information on commercial property is important or very important for their business.

Yet they are struggling to achieve this, with only 13% saying they are very good or good at gathering this level of data on commercial property portfolios.

How important is it for your business to have accurate and detailed information on commercial property?

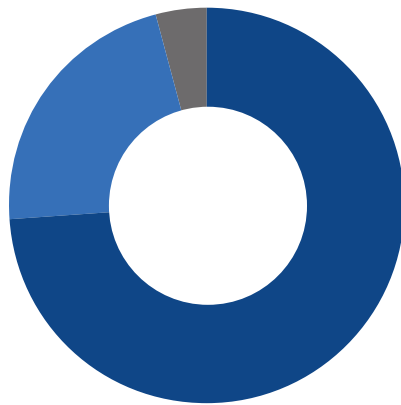


How good are you at achieving this today?



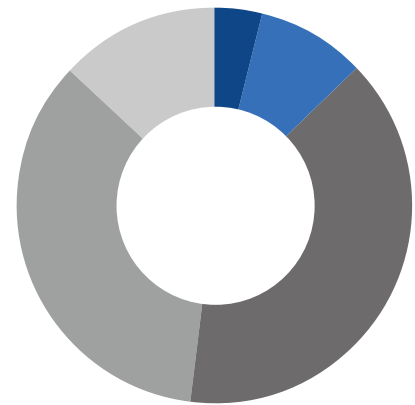
These are results of a recent survey of 43 insurers and brokers.*

How valuable would it be to have real-time risk data (Digital Twins of risk) on 100% of your property portfolio?



Very Valuable	74%
Valuable	22%
Somewhat Valuable	4%

How good are you at achieving this today?



Very Good	4%
Good	9%
Neutral	39%
Not Very Good	35%
Poor	13%

These are results of a recent survey of 43 insurers and brokers.*

The importance of having real-time risk data across 100% of a property portfolio is clearly recognised, with 96% of respondents saying it would be valuable or very valuable.

But again, there is a gap between intention and reality, with only 13% admitting they are very good or good when it comes to their actual use of real-time data.

There is big potential for improvement. With a detailed risk breakdown across all

sites through Digital Twins of risk, insurers and brokers can analyse risk more quickly and accurately, ensuring a far more precise 360° view of risk across 100% of commercial properties.

The approach saves time, reduces costs and allows for a better customer experience. Insurers can shift from being just a policy provider to a trusted partner, helping their customers drive business continuity and avoid disruption.

Digital Twins allow insurers and brokers to deliver better results

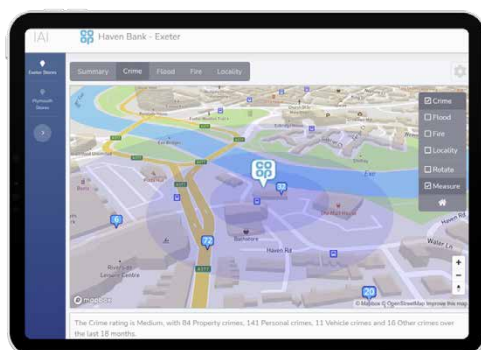
- Accurately analyse and price risk
- Carry out desk surveys at a fraction of the time and cost
- Accurately analyse whole commercial property portfolios
- Identify high and low-risk properties fast
- Track and drive-forward risk improvement programmes with commercial customers
- Aid portfolio steering to encourage a diverse mix and balance of risks
- Allows insurers to identify and create a more profitable business by bringing down the overall cost of risk by reducing claims cost (frequency and severity) and lower operating expenses
- Allows commercial property owners to analyse property portfolios before they are acquired, driving down risk, and improving health and safety and business continuity
- Allowing users to better understand risks, not only within their estate, but potentially across their global supply chain

Driving change with AI and Digital Twins

AI together with Digital Twins can be used to better analyse risk across 100% of sites, helping to drive risk improvement, using real-time dashboards to track and communicate risk, and deliver risk benchmarking across whole commercial property portfolios.



Digital Twins case studies



Accurate address data

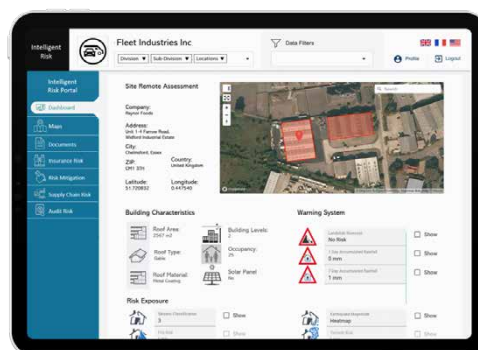
Many property portfolios contain insufficient or inaccurate location data.

A commercial property investment portfolio was reviewed recently, containing 2,800 apartment blocks and 70,000 + apartments.

Only 40% had latitude and longitude data, and some 30% were incorrect by up to half a mile - a considerable margin of error when looking at proximity to underground tanks, seismic activity and closeness to bodies of water or wildfire zones.

Insurers incur substantial operational costs in manually correcting location data and unexpected losses from inaccurate risk models.

Digital Twins can deliver accurate latitude and longitude data across 100% of the portfolio - reducing losses and lowering operating costs by removing the need for manual data correction.



Parametric insurance solutions

Digital Twins can deliver real value in the underwriting of parametric insurance products.

Take a claim for roof damage on a factory caused by hail.

Digital Twins can quickly analyse local IoT weather stations within a few miles of the site to determine if weather conditions on the day of the incident are consistent with hail.

Satellite images directly before and after the date of the claim can be automatically analysed using AI image analysis and synthetic aperture radar from the satellite to determine if the claim is genuine, calculate the percentage of damage and automate a payout without the need to send a loss adjuster.

Applying AI and satellite image analysis across a commercial property portfolio can identify the building's condition before binding the policy. This provides a better customer experience, minimises business interruption, helps mitigate claims and lowers operating costs.



Risk mitigation

Digital Twins and IoT data can be used to predict and prevent events.

Increasingly, data can be gathered to create hyper-local short-term weather incident forecasts and provide upwards of a three-hour hyper-local warning of an impending event.

A more accurate flood model generated by Digital Twins can automate alerts to locations in areas with a higher probability of a flood in the next three hours. The customer can then respond, moving stock to higher ground or taking other preventative actions to help prevent or mitigate loss.

This helps minimise business interruption and mitigates insurer claims.



A.I. Image Analysis (before storm)



A.I. Image Analysis (after storm)

Claims process

Digital Twins can generate macro-level assessments far more quickly than current manual methods.

Where a disaster has occurred across a wide area, such as the New Orleans Floods of 2005 or the Beirut ammonium nitrate store explosion in 2020, it can take weeks or months for insurers to understand the magnitude of impact/loss and focus their support.

AI satellite image analysis and Digital Twins can provide live 'catastrophe risk analysis' and provide 'cumulative risk estimations' in days or hours. This increases the support that insurers can provide to their customers and helps speed up interim claims payments.



The Iceberg theory: insured vs uninsured losses

When considering the return on investment (ROI) for risk improvements, it is important to consider insured and uninsured losses.

The 'iceberg theory' refers to looking at only a proportion of a much larger or more complex issue or problem.

Take a major global corporation that experiences the loss of a key manufacturing and distribution centre. The physical damage may be insured, including the resulting business interruption and the rebuild or reinstatement period.

However, any insurance policy only goes so far, and what is never covered are the customers you've lost, the growth you've forfeited, and the penalty you've paid (and will continue to pay) as investors lose confidence in you.

These losses can destroy enterprise value, if not enterprises themselves and Digital Twins can help insurers and customers to understand the wider cost of not managing and mitigating risk.

Uninsured losses can have a far greater impact

A customer was finding it hard to justify a £1m investment in flood defences, to defend a property valued at £190m.

However, when they also included potential uninsured costs, the company calculated that they could lose a further £450m from its market value if they did not invest.

Customer loss - £145m - caused by protracted business disruption.

Loss of growth - £240m - over the short and medium term, caused by a 24 month rebuild against its earlier projected growth statements.

Loss of investor confidence - £65m - caused by lack of contingency planning and poor risk mitigation, driving down investor confidence and resulting in higher cost of capital.

Many commercial customers are so focused on the insured losses that they fail to factor in uninsured losses in their ROI calculations when approving risk mitigation costs.

Digital Twins can help both customers and insurers to drive increased risk mitigation.



The digital insurer

Insurers need to use technology to drive a smarter underwriting and risk management approach.



Real-time risk insight across 100% of your property portfolio has the potential to lower the cost of risk and drive down claims and losses for insurers and commercial customers.

The opportunity to build competitive advantage by translating the mass of available data into actionable insights, leading to better decision-making, is clear.

There are adoption challenges as we highlighted in our [first white paper](#): Transforming Commercial Property Risk with the IoT.

But the evidence is clear. Embracing the use of Digital Twin data, alongside IoT and AI, will help drive improved underwriting performance and support customer risk management practices, reducing the total cost of risk for all stakeholders.

“ Now more than ever intelligent real-time risk information is needed. Producing a Digital Twin of a company, that can then be used to explore risk mitigation methods [is] a truly great idea. ”

Trevor Maynard, Head of Innovation
at Lloyd's of London

Benefits for insurer

- More accurate risk pricing
- Lower cost reinsurance
- 100% portfolio coverage
- 360° view of risk
- Lower claims & operating costs

Benefits for broker

- Gain lower premiums for customers
- Help customers to lower risks
- Parametric claims management
- Real-time risk data
- New AI insurance products

Benefits for customer

- Proactive risk mitigation
- Improve Health & Safety
- Lower insurance costs
- Benchmark risk across sites
- Reduce business interruption

About Intelligent AI

Intelligent AI is focused on helping to deliver the data transformation shift now underway.

For insurers, brokers and customers, we provide enhanced understanding of risk, better decision making and improved client journeys through exceptional data insight and real-time document processing using AI, satellite image analysis, data analytics, online risk survey tools and Digital Twins.



Intelligent Risk Management



AI Risk Report Reading



Online Risk Surveys



Digital Twins of Risk

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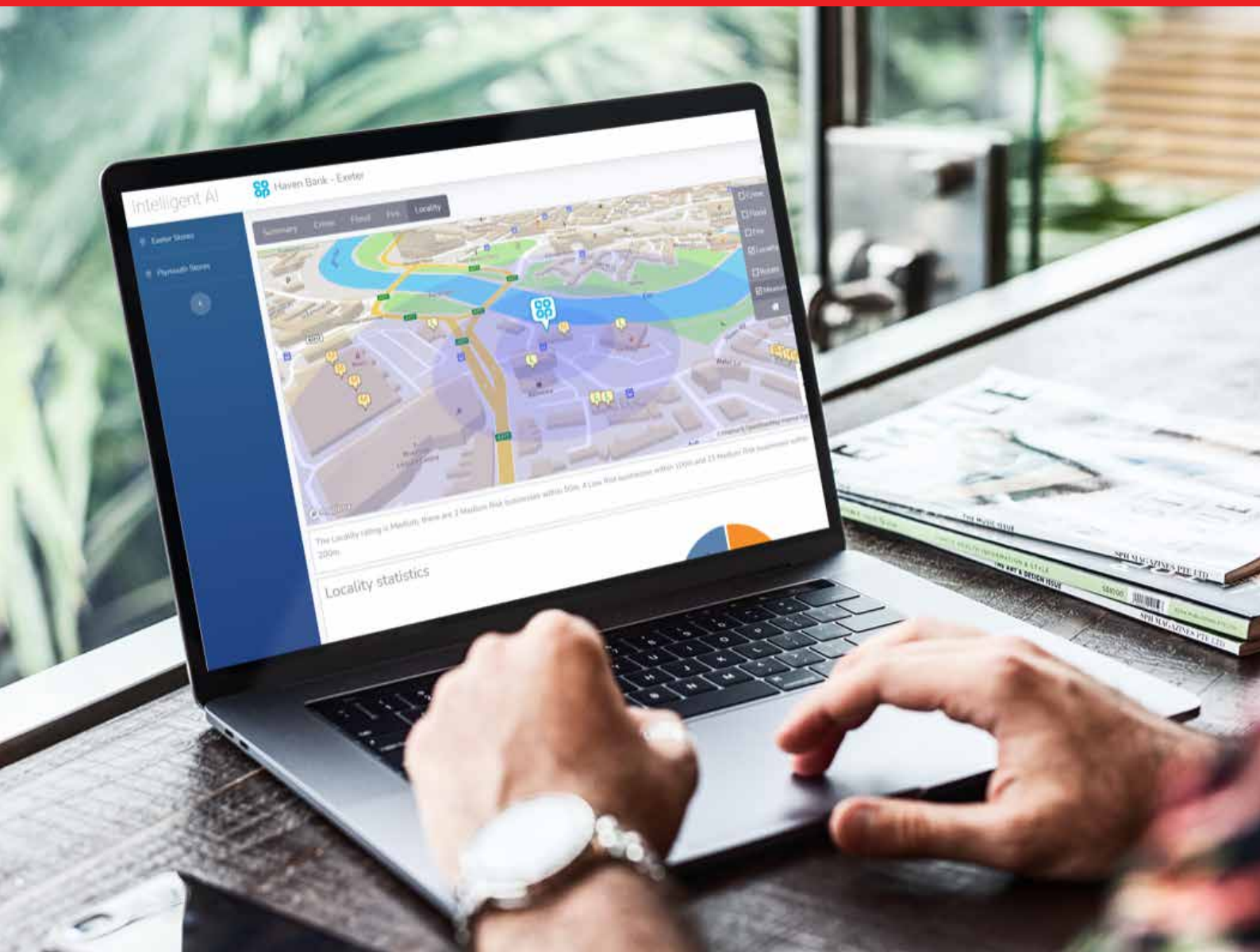
Intelligent AI is working with University of Exeter, The Digital Catapult and The Alan Turing Institute.

Intelligent AI is a consortium member of a £2m Innovate UK-funded 'KnowRisk' project that brings together data and deep domain expertise from Insurance, Legal, Audit and Supply Chain to revolutionise global risk management.

This white paper was produced in partnership with the SENSE Consortium.

Discover the benefits of working with Intelligent AI

To find out more about our products or to book a consultation, please visit intelligentai.co.uk or email info@intelligentai.co.uk



We are a start-up company with big ambitions and an innovative team.

Find out how our solutions could transform your business.

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Get in touch today

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*Survey data taken from the SENSE Consortium Survey – Real-time data for improved commercial property insurance risk management